DETAILED ACTION

Election/Restrictions

1. Applicant's election without traverse of Group I (claims 1-8 and 16-23) in the reply filed on 10/03/11 is acknowledged.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

3. Claims 1, 6, 16, and 21 are rejected under 35 U.S.C. 103(a) as being unpatentable over MacNally et al. (hereinafter "MacNally", US Pat. No. 7,065,327) in view of Willis (US Pat. No. 6,768,443).

As per claim 1, MacNally disclose a transformer (see fig. 1, col. 5/ln. 12) having a first winding and a second winding, wherein the first winding is operably coupled to an antenna and the second winding coupled to a power amplifier (see fig. 1/item PA) and a low noise amplifier (see fig. 1/item LNA), wherein the power amplifier is enabled when the radio front end is in a transmit mode and the low noise amplifier is enabled when the radio front end is in a receive mode (col. 6/ln. 16-26); and a matching network (see fig. 1, col. 5/ln. 12-13) operably coupled to the second winding, wherein the matching

network provides a first impedance when the radio front end is in a transmit mode and provides a second different impedance when the radio front end is in a receive mode such that impedance at the first winding is substantially similar in the transmit mode when the power amplifier is enabled and in the receive mode when the low noise amplifier is enabled (see col. 6/ln. 37-64).

McNally disclose that the RF matching network is designed to provide a matching impedance (50 ohms), in transmit or receive mode, to match the impedance of the first winding (antenna impedance (50 ohms), col. 6/ln. 37-56) but not explicitly an adjustable load. Willis discloses such an adjustable load that provide impedance matching in the transmit mode and receive mode (fig. 1/no. 16, col. 2/ln. 29-40, especially R2 and R5). Therefore, it would have been obvious to one of ordinary skill in the art for McNally to utilize such adjustable load network, as taught by Willis, in order to improve signals transmission while optimized power consumption effectively.

As per claims 6 and 21, the modified communication apparatus of McNally and Willis further disclose determining the load impedance selection signal based on at least one of impedance matching of load on single-ending winding, output power requirements, or receiver sensitivity (see McNally, col. 6/ln. 48-col. 7/ln. 57, see Willis, col. 2/ln. 29-65).

As per claim16, McNally disclose a radio frequency integrated circuit (fig. 1, col. 2/ln. 20-21) comprising a radio front end (fig. 1) operable coupled to transceiver radio frequency signals; a low noise amplifier (fig. 1/item LNA) operable coupled to the radio front end, wherein the low noise amplifier receives inbound RF signals from the radio

front end, and wherein the low noise amplifier amplifies the inbound RF signals to produce amplified inbound RF signals; down conversion module (fig. 1, col. 3/ln. 30-57) operable coupled to convert the amplified inbound RF signals into inbound baseband signals; baseband processing module (fig. 1, col. 3/ln. 30-57) operable coupled to convert the inbound baseband signals into inbound data and to convert outbound data into outbound baseband signals in accordance with a wireless communications protocol; up conversion module (fig. 1, col. 3/ln. 30-57) operable coupled to convert the outbound baseband signals into outbound RF signals; and a power amplifier (fig. 1/item PA) operable coupled to amplify the outbound RF signals to produce amplified outbound RF signals and to provide the amplified outbound RF signals to the radio front end. McNally further disclose the radio front end includes a transformer (fig. 1, col. 5/ln. 12) having a first winding and a second winding, wherein the first winding is operable coupled to an antenna and the second winding coupled to at least one of a power amplifier and a low noise amplifier; and a matching network provides a first impedance when the radio front end is in a transmit mode and provides a second different impedance when the radio front end is in a receive mode such that impedance at the first winding is substantially similar in the transmit mode and in the receive mode (see col. 6/ln. 37-64).

McNally disclose that the RF matching network is designed to provide a matching impedance (50 ohms), in transmit or receive mode, to match the impedance of the first winding (antenna impedance (50 ohms), col. 6/ln. 37-56) but not explicitly an adjustable load. Willis discloses such an adjustable load that provide impedance

matching in the transmit mode and receive mode (fig. 1/no. 16, col. 2/ln. 29-40, especially R2 and R5). Therefore, it would have been obvious to one of ordinary skill in the art for McNally to utilize such adjustable load network, as taught by Willis, in order to improve signals transmission while optimized power consumption effectively.

Allowable Subject Matter

4. Claims 2-5, 7-8, 17-20, and 22-23 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Conclusion

5. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Pablo Tran whose telephone number is (571)272-7898. The examiner normal hours are 9:30 -5:00 (Monday-Friday). If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Edward Urban, can be reached at (571)272-7899. The fax phone number for the organization where this application or proceeding is assigned is (571)273-8300.

6. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) System. Status information for Published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see httpr//pair-directauspto.gov. Should

You have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (in USA or CANADA) or 571-272-1000.

February 25, 2012

/Pablo N Tran/

Primary Examiner, Art Unit 2618